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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,574

01/23/2006

Hiroyuki Tokuda

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11/10/2008

BURR & BROWN

PO BOX 7068

SYRACUSE, NY 13261-7068

EXAMINER

MCCLENDON, SANZA L

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,574	Applicant(s) TOKUDA ET AL.	
	Examiner Sanza L. McClendon	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102/35 USC § 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-6, and 10-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Doi et al (2005/0148676).

Doi et al sets forth resin compositions and optical elements made therefrom. Said resin composition comprises a urethane (meth) acrylate oligomer component (A), a bisphenol A epoxy (meth) acrylate (B), a monomer component comprising phenoxy polyethylene glycol (meth) acrylate (C), a bisphenol A polyethoxydiol di(meth) acrylate (D), and a photoinitiator (E)--see abstract and examples. It is deemed that the urethane methacrylate of the reference reads on the thermoplastic component (d) of claim 1 and the phenoxy polyethylene glycol (meth) acrylate is deemed to read on the mono-functional (meth) acrylate of claim 1. The ethoxylated Bisphenol A epoxy (meth) acrylate of Doi et al has the general formula (VI) as found on page 5. Doi et al teaches

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per example that the ethoxylated Bisphenol A epoxy (meth) acrylate can be used in combination with another ethoxylated bisphenol A epoxy (meth) acrylate, wherein the difference between the two are the molar addition amounts of the ethoxylated portions in the compound. This teaching reads on applicant's (b1) and (b2) and the corresponding definitions as found in claim 1. Regarding applicant's component (b3), Doi et al teaches that in addition to the above required components other vinyl or (meth) acryloyl compounds can be added, wherein bi- and higher functional (meth) acrylate compounds containing oxyalkylene structures can be found, such as bisphenol A polypropoxydiol dimethacrylate is taught among other alkoxylated alkylenes--see section [0058] on page 5. Therefore, the examiner deems that Doi et al sets forth the composition of claims 1 and 3. In the alternative, it is also deemed that Doi et al renders instant resin composition obvious in such a way that one of ordinary skill in the art would have been able to make/obtain the instantly claimed composition of claim 1 from the teachings of said reference. Regarding claim 4, Doi et al does not expressly teach the Tg of the urethane (meth) acrylate in the resin composition. And since the Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether Applicant's composition differs and, if so, to what extent, from the discussed reference (the Tg of the thermoplastic resin). Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants. Regarding claim 5, the phenoxyethylene glycol (meth) acrylate is deemed to read on the mono-functional (meth) acrylate having a cyclic structure and the formula (IV) for the epoxy (meth) acrylate used in the resin composition of Doi et al reads on the defined epoxy (meth) acrylate. Regarding claim 6, it is deemed that the examples set forth overlapping ranges with the instant claimed ranges in claim 6. Regarding claim 10, Doi et al teaches said resin composition is coated onto a transparent substrate, such as polycarbonate, polystyrene, polyester and polyacrylic resins, and then cured using ionizing radiation to form an optical element. Said transparent substrate is in the form of a lens--see section 0084. Regarding claim 11, Doi et al, per section 0087, teaches the resin composition can be coated onto a transparent substrate in a Fresnel lens shaped mold for form a coating, to obtain a Fresnel lens having a refractive index as defined within the teachings of the reference--also see section [0091], [0092], and the examples.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi et al (same as above).

6. Doi et al is set forth in the above rejection as reading on the instant claimed invention, however Doi et al does not expressly teach adding multi-functional (meth)acrylate compounds, such as tri- or higher-functional compounds in the resin composition. Doi et al does teaches the addition of optional additives, such as mono-functional and multi-functional compounds, including tri- and higher-functional (meth)acrylate compounds. Therefore the examiner deemed that it would have been obvious to a skilled artisan to select a tri- or higher functional compounds, such as those disclosed by the reference. The motivation would have been a reasonable expectation of increasing and/or modifying the crosslink density of the cured product, as well as, diluting the resin composition to tailor the viscosity to the necessary values for coating processes in absence of evidence to the contrary and/or unexpected results. Regarding claim 8, Doi et al sets forth the use of alkoxylated trimethylolpropane triacrylates. The examiner deems that one of ordinary skill in the art would have been motivated to select said compounds because they are known to increase and/or modify the crosslink density of the cured product, as well as, diluting the resin composition to tailor the viscosity to the necessary values for coating processes in absence of evidence to the contrary and/or unexpected results. Additionally, it is deemed that the courts

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have upheld that it is obvious to add known ingredients for their known properties--see In re Linder 173 USPQ 356. Regarding claim 2, it is deemed that Doi et al teaches the mass ratio of $b1/b2$ in the examples, for instance see composition E in Table 1, however Doi et al fails to teach the mass ratio of $b3/(b1 + b2)$. The examiner deems it is well within the skill of an ordinarily skilled artisan not only to choose an propoxylated bisphenol A or other (meth) acrylate compound from the optional monomers as taught by the reference (see section 0058) but also to increase the addition from those (for the optional monomers) found in the examples to overlap with the claimed ranges. The motivation would have been a reasonable expectation of increasing and/or modifying the crosslink density, optimizing the coating viscosity, as well as, dissolving the other components to obtain a homogeneous coating composition (i.e. compatibility with the other required alkoxyated components in the composition) in the absence of evidence to the contrary and/or unexpected results. Additionally, the courts have upheld not only that it is obvious to add known ingredients for their known properties--see In re Linder 173 USPQ 356, but also that determination of optimum values of known "result effective variable" is not patentable--see In re Boesch, 205 USPQ 215.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,309,585 to Zheng et al sets forth resin composition for optical elements, such as Fresnel lens, comprising a mixture of ethoxylated bisphenol A di (meth) acrylates, reactive diluents, photoinitiators and sensitizers, and UV absorbers. Zheng et al differs from the instant invention because there is no teaching of a thermoplastic resin or a compound such as $b3$ as found in the instant claims. US 5,714,218 to Nishio et al sets forth optical elements obtained from resin compositions comprising epoxy (meth) acrylates and mono-functional (meth) acrylic compounds having cyclic structures. However, Nishio et al does not set forth the use of thermoplastic resins or propoxylated bisphenol a dimethacrylates ($b3$), as well as, mixtures of ethoxylated bisphenol A methacrylates ($b1$ and $b2$). US 5,410,006 to Tachibana et al sets forth resin compositions for Fresnel lens comprising a urethane

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acrylate prepolymer, an epoxy methacrylate resin and other components. However, Tachibana et al fails to teach the addition of propoxylated bisphenol A dimethacrylates (b3) and mixtures of ethoxylated bisphenol A methacrylates (b1 and b2). US 5,903,399 is added to the PTO-892 form because it is the English language equivalent of JP 11-240926 from the PTO-1449, dated 01/23/2006.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sanza L McClendon/
Primary Examiner,
Art Unit 1796

SMc